UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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4 May 2005

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Subject: Draft Feasibility Study Addendum (FSA), Operable Unit 2C, Installation Restoration Program (IRP) Sites 3 and 5
Former Marine Corps Air Station, El Toro, California

Mr. Piszkin:

The U.S. Environmental Protection Agency has reviewed the subject draft FSA dated March 2005. This FSA adds the installation of passive gas control trenches within the compliance monitoring zone and vertical landfill gas extraction wells within the waste placement boundaries for many of the alternatives developed and evaluated for IRP Sites 3 and 5. We have the following comments to offer on the document. We have also included a number of comments on the Technical Memorandum, Pre-Design Investigation for this project dated February 2005 at the conclusion of our FSA comments.

If you should have any questions/concerns, please contact me at 415-972-3349.

Sincerely,

Rich Muza

Rich Muza, RPM
Superfund Division

cc. Karnig Ohannessian, NFECSW SDIEGO
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Comments on the Draft Feasibility Study Addendum (FSA) for Installation Restoration Program (IRP) Sites 3 and 5
March 2005

1. Section 9, General – Under the evaluation of "Long-Term Effectiveness and Permanence", there is some confusion in reviewing the sections for the different alternatives as to the reference for the HELP modeling and the revised UNSAT-H modeling evaluations used to estimate the amount of infiltration that would occur under the various capping alternatives. Are all of these results provided in Appendix D of the 1997 FS Report? If no, please provide the proper reference for this work.

2. Section 9, General -- Under the evaluation of "Reduction in Toxicity, Mobility, or Volume through Treatment", the text in each subsection discusses reduction of mobility and volume, but does not address reduction of toxicity. It is recommended that the text be revised to discuss whether each of the various alternatives reduces toxicity.

3. Section 9.1.2.3 & Table 9-1 -- According to the text, two additional perimeter gas wells would be installed for landfill gas monitoring; however, no cost estimates are provided for this additional environmental monitoring equipment in Table 9-1. It is recommended that this discrepancy be corrected.

4. Section 9.2.2, , Page 9-52 -- Under "Overall Protection of Human Health and the Environment ", the Site 5 text appears to have been copied from the Site 3 write-up. The text here states that institutional controls would not prevent erosion, but there is no discussion of the potential for erosion in Section 9.2.2. It is recommended that this discrepancy be corrected.

5. Section 10.1 – "however, Alternative 2 will use institutional controls to assure that there will be pathway for exposure to groundwater." What is meant by this statement? Please edit/revise the statement as necessary.

6. Table 10-1 – Under "Overall Protection of Human Health and the Environment", Alternative 5b is rated as "high" while all other alternatives with an estimated infiltration rate within the same order of magnitude (ie., Alternatives 3, 4a, 4b, and 5a) as this alternative are rated as "moderate". On what basis is Alternative 5b given a higher protectiveness rating over alternatives with analogous modeled infiltration rates and all other criteria equivalent to Alternative 5b? Please modify rating as appropriate.

7. Table 10-1 – Under "Reduction of Toxicity, Mobility, or Volume through Treatment", for Alternative 4a it is stated "prevents almost all of the infiltration". For all other alternatives with an estimated infiltration rate within the same order of magnitude (ie., Alternatives 3, 4b, 5a, and 5b) as this alternative, the evaluation states "prevents most infiltration". On what basis is Alternative 4a given a standing here over alternatives with analogous modeled infiltration rates and all other criteria equivalent to Alternative 4a?

8. Table 10-1 – Under "Short-Term Effectiveness", for Alternative 3 it is stated "shortest time to construct all of the landfill cap options (3 months)." However, the timeframe provided for cap construction for Alternatives 5a, 5b, and 6a are shorter than that given for Alternative 3. It is recommended that this discrepancy be corrected.

9. Table 10-1 – Under "Implementability", Alternative 4d is given a rating of "moderate-high" while all other alternatives with the same implementability criteria (ie., Alternatives 6a and 6b) are rated as "moderate". On what basis is Alternative 4d given a higher implementability rating over alternatives with like criteria? Please modify rating as appropriate.

10. Table 10-2 – Under "Overall Protectiveness of Human Health and the Environment", it would seem that the protectiveness rating for Alternatives 5a and 5b have been reversed. With all other criteria being the same, the estimated infiltration rate for Alternative 5a is lower than that for Alternative 5b, which would make Alternative 5a more protective for potential leaching of contaminants to ground water than Alternative 5b. This is not the case as presented here. It is recommended that this discrepancy be corrected.

11. Table 10-2 – Under "Reduction of Toxicity, Mobility, or Volume through Treatment", the overall rating for some of the alternatives is very confusing as compared to the others with like criteria. For example, under Alternatives 4c, 4d, and 5a, it states "prevents almost all of the infiltration" with all other criteria provided being the same; but the rating for Alternative 5a is "moderate-high" while the other two are "high". Also, for Alternatives 5b, 6a, and 6b it is stated "high reduction in infiltration" with all other criteria the same; but the rating for Alternative 5b is "moderate" while the other two are "high". What are the rationale for these discrepancies? Please modify the ratings as appropriate.

12. Table 10-2 – Under "Implementability", Alternatives 4d, 6a, and 6b are rated as "moderate-high" for Site 5 while Alternatives 6a and 6b (see comment 9 above regarding 4d under Site 3) are rated as "moderate" for Site 3. The implementability rating provided in Table 10-1 for Site 3 would seem to be the more appropriate rating for these alternatives. It is recommended that this discrepancy be corrected.

13. Table 10-2 – Under "Costs", Alternative 6a is rated as "moderate" at $6.5 million while Alternative 4d is rated at "low" at the same costs. What is the rationale for this discrepancy? Please modify the ratings as appropriate.

14. Section 10.4 – "None of the alternatives in this FS are intended to reduce the volume of the landfill materials." It can also be stated here that none of the alternatives reduce the potential toxicity of the landfill materials. It is recommended that the reduction of toxicity aspect be evaluated in this section as well as mobility and volume.

**Comments on the Technical Memorandum, Pre-Design Investigation,
Operable Unit 2C, IRP Landfill Sites 3 and 5
February 2005**

GENERAL COMMENTS

1. The Tech Memo was first generated in draft form and later revised as a result of regulatory comments. Following the generation of these comments (middle to late 2003), additional investigations were performed in late 2003 and into 2004 which were incorporated into this version of the Tech Memo. However, inconsistencies are noted within the Tech Memo related to the results of the these and prior investigations and potential future remedial actions. For example, the Executive Summary indicates that an active landfill gas collection system or gas vent system and/or passive system will be installed while the bullet point lists provided on pages 1-8 and 1-13, which summarize the results of previous investigations for both IRP Site 3 and IRP Site 5, respectively, indicate that the remedial design does not appear to require landfill gas controls for either site. It is understood that the text in Section 1 is designed to provide a summary of prior investigations and conclusions; however, since the conclusion is currently not applicable based on the discussion in the Executive Summary, there would be no reason it could not be updated to reflect the current thought processes, or if warranted, removed from the Tech Memo. It is recommended that the Tech Memo be reviewed for this and other similar discrepancies and revised where warranted to accurately present the data and any resulting conclusions.

2. The Tech Memo does not indicate whether land use controls or deed restrictions will be incorporated as part of the remedial action to be implemented at IRP Sites 3 and 5. While it is understood that a FSA has been submitted and is under separate review, these types of details would enhance the overall discussion of the results as well as the conclusions and recommendations. It is recommended that the Tech Memo be revised to include a discussion of any land use controls or deed restrictions that will be incorporated into the remedial action.

3. The Tech Memo presents a discussion of the overall activities as well as information regarding the revision to the landfill boundaries as a result of the identification of lower volumes of waste than previously anticipated. Section 2.5 (page 2-13) of the Tech Memo also indicates that geotechnical testing and soil sample collection that were proposed as part of the pre-design field activity for IRP Sites 3 and 5 were not conducted due to the significant revisions to the landfill boundaries and that geotechnical samples will be collected at a later date in conjunction with the final design. While it is understood that this issue will be revisited, it is still warranted that some discussion be provided detailing if/how the overall sampling proposed will have changed as a result of the new estimates of waste volumes which resulted from the trenching investigation. Where appropriate, it is recommended that additional discussion be provided regarding how the originally proposed activities may have changed as a result of these new findings. In addition, it is recommended that an indication be given as to whether any future sampling conducted in

conjunction with the final design will be defined and submitted in advance to allow for regulatory review.

SPECIFIC COMMENTS

1. Section 2.1.1, Page 2-2 -- The information provided on the top of page 2-2 states that if the vertical extent of the waste was not identified but the maximum reach of the excavator was met, the excavation was stopped. This statement requires further discussion regarding the frequency at which this situation occurred, the conditions at each location where this occurred, how this might affect waste volumes, and whether any other data (i.e., borings) may be available to define the true vertical extent of the waste at each location. It is recommended that Tech Memo be revised to address this concern.

2. Section 2.3.5, Page 2-11 -- The text in this section indicates that field measurements were collected using a flame ionization detector (FID) for organic vapors. However, Table 2-4, IRP Site 5 Perimeter Soil-Gas Monitoring Well Sampling Details, shows the results of photo ionization detector (PID) readings. It is recommended that the Tech Memo be revised to correct this apparent discrepancy.

3. Section 3.2.3, Page 3-4 -- The second point of this section indicates that the landfill gas collection system will remain inactive or vent passively unless a contingency is triggered based on monitoring. It is unclear specifically what the parameters for triggering the contingency will be and what that ultimate response will be. While it is assumed that these would follow 27 CCR requirements (ie., quarterly monitoring at a minimum, trigger values for methane), this should be clearly defined. In addition, this issue was apparently presented to the California Integrated Waste Management Board (CIWMB) and other Federal Facilities Agreement (FFA) signatories in a June 24, 2004 letter; however, a copy of this letter has not been provided for review. It is recommended that the Tech Memo be revised to include a copy of the June 24, 2004 letter as an attachment and to further discuss monitoring parameters that will trigger a response and identify the nature and scope of any potential responses.

4. Table 3-6, Page 3-23 -- The results for Sample Location 05SG02 at sample depth 15 feet are 2.5 parts per million by volume (ppmv) using a check sample/syringe and 120 ppmv using a Tedlar bag. It is unclear as to why there would be such a large difference in sample concentrations for the two sample collection methods. It is recommended that the Tech Memo be revised to clarify this anomaly for this sample location.